UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,396	01/18/2002	Santosh C. Lolayekar	E003-1005US0	8983

48789 7590 11/02/2007	EXAMINER
LAW OFFICES OF BARRY N. YOUNG	GREY, CHRISTOPHER P
260 SHERIDAN AVENUE	

	ART UNIT	PAPER NUMBER
	2616	

MAIL DATE	DELIVERY MODE
11/02/2007	PAPER

LAW OFFICES OF BARRY N. YOUNG
260 SHERIDAN AVENUE
SUITE 410
PALO ALTO, CA 94306-2047

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	**Applicant(s)**
Office Action Summary	10/051,396	LOLAYEKAR ET AL.
	Examiner	**Art Unit**
	Christopher P. Grey	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS·COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 August 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *19-23* is/are allowed.

6)☒ Claim(s) *1-16, 18 and 24-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

1.   Claims 34-35 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

The examiner is unclear of how the invention is being carried out if there are

more than one medium as claimed. Furthermore, the claim does not provide support for

medium

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
conditions and requirements of this title.

2.   Claim 34-35 is rejected under 35 U.S.C 101 as the claimed invention is directed

to non-statutory subject matter.

The "stored on a medium" is in the preamble. The body of the claim does not

refer back to the preamble so the preamble is given no patentable weight, just intended

use, and **the claim only claims instructions.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1, 2, 7, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Gentieu (US 6880070) in view of Hipp (US 20050111364)

Claim 1, 2, 7, 9   Gentieu discloses receiving at a first port **(fig1, 150, where a port**

by definition is merely a physical interface between a circuit and a device) of the

switch **(Col 1 line 24, communication device)** a packet that specifies a virtual target

as a destination.

Gentieu discloses sending at a second port **(fig 4, 440, where a port by**

definition is merely a physical interface between a circuit and a device) of the

switch the packet to a physical target that is associated with the virtual target.

Gentieu discloses wherein steps a and b occur without buffering and at

wirespeed within the switch **(Col 2 lines 55-58 and Col 1 line 55)**.

Gentieu does not specifically disclose virtualizing the data packet specifying a

virtual target and switching the packet to a physical target that is associated with the

virtual target by translating the first address to a second address.

It is understood in the art that network data contains a header which is comprised

of source and destination information, where the destination information is equivalent to

a virtual target, where the claim does not define the structure of virtual target or the

information associated with it. Therefore any specified target may be considered a virtual target, and furthermore, a physical target is equivalent to a virtual target as no designated structure has been specified.

Hipp discloses the data packet specifying a virtual target **(para 0025, line 26, IP address)** and switching the packet to a physical target **(para 0025, line 28, allocating new port)** that is associated with the virtual target **(para 0026, line 4, mapping b/w ports)**.

Hipp discloses virtualizing by translating a first address to a second address (fig 7, 2, and para 0031, translates the initial port p1 to the new port p2) without buffering (where fig 7 and the related description show no buffering for the communication).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the multiplexing means (fig 4, 150) with the processor as disclosed by Gentieu. The motivation for this combination is to support the communication between applications which use virtual ports.

Claim 2   Gentieu discloses wherein steps a and b further occur at wire speed **(Col 1 line 55)**.

Claim 7   Gentieu does not specifically disclose wherein the packet is for a particular request, and wherein at least one trace tag is associated with the packet and identifies information associated with the request.

Hipp discloses wherein the packet is for a particular request, and wherein at least one trace tag is associated with the packet and identifies information associated with the request **(para 0031, since data is extracted at the second VPM and translated,**

the data being sent is equivalent to a request, and the AID or addresses are

equivalent to a trace tag specifying information about the data).

4.   Claims 3, 4, 5, 6, 8 10, 11, 12, 13, 34, 35, 24, 25, 26, 29 , 30, 31, 32, 33 are

rejected under 35 U.S.C. 103(a) as being unpatentable over Gentieu (US 6880070) in

view of Hipp (US 20050111364) in further view of Morgan (US 5524254)

Claim 3, 8   Gentieu does not specifically disclose wherein the first port is located on a

first linecard and wherein the second port is located on a second linecard, the first

linecard forwarding the packet to the second linecard along with information about the

virtual target, the second linecard utilizing the information about the virtual target to

update the packet with an address of a physical target.

Hipp discloses a first port **(p1 in fig 6)** forwarding the packet to a second port

(para 0031, lines 10-14, first port forwards data to second VPM, where the second

VPM is directly associated with the second port P2) along with information about the

virtual target **(para 0031 lines 19-21m destination address).**

Hipp discloses the second port (para 0031, line 13, the second VPM is directly

associated with the second port) utilizing the information about the virtual target to

update the packet with an address of a physical target (para 0031 lines 13-14 and lines

19-21), where the translation involves translating form a first virtual port to a detention

IP address and port).

The combined teachings of Gentieu and Hipp do not specifically disclose first and

second ports being located on first and second linecards respectively.

Morgan discloses ports being located on a linecard as disclosed in **fig 5,**

element 74a and 74b.

Regarding claim 8, Hipp discloses a plurality of port and a multiplexing system,

where it would have been obvious to one of the ordinary skill in the art that the

combined teachings is applicable to a plurality of linecards in connection such as those

shown in fig 5 of Morgan.

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the combined teachings of Gentieu and Hipp, to provide the

discussed components on a line card such as that shown in fig 5 of Morgan. The

motivation for this modification is to support the physical and data link layer of

communication, and support different services **(Col 3 lines 22-30).**

Claim 4   Gentieu does not specifically disclose wherein the information about the

virtual target is obtained from a virtual target descriptor.

Hipp discloses wherein the information about the virtual target is obtained from a

virtual target descriptor **(para 0031 lines 15-21, where the information being**

extracted and translated is obtained from the transmitted data, and describes the

virtual destination).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the invention of Gentieu so as to contain destination information as

disclosed by Hipp. The motivation for this modification is to specify a destination for

routing **(Hipp para 0023 lines 22-23).**

Claim 5, 6   Gentieu does not specifically disclose the information about the virtual

target being obtained from a virtual target descriptor stored in a memory on the first

linecard.

Hipp discloses the information about the virtual target being obtained from a

virtual target descriptor stored in a memory on the first linecard **(fig 6 shows a first**

VPM and a second VPM being connected to a first port p1 and second port P2

respectively, and steps 12 and 13 in fig 6 show a table).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the processor as disclosed by Gentieu so as to implement VPM

routing and adding a VPM to the ports as disclosed by Hipp. The motivation for this

modification is to virtually route data from one device to another.

Claim 10, 11, 12, 13, 34, 35, 24-33   Gentieu discloses receiving at a first port **(fig1,**

150, where a port by definition is merely a physical interface between a circuit

and a device) of the switch **(Col 1 line 24, communication device)** a packet that

specifies a virtual target as a destination.

Gentieu discloses sending at a second port **(fig 4, 440, where a port by**

definition is merely a physical interface between a circuit and a device) of the

switch the packet to a physical target that is associated with the virtual target.

Gentieu discloses wherein steps a and b occur without buffering and at

wirespeed within the switch **(Col 2 lines 55-58 and Col 1 line 55)**.

Gentieu does not specifically disclose the data packet specifying a virtual target

and switching the packet to a physical target that is associated with the virtual target.

It is understood in the art that network data contains a header which is comprised of source and destination information, where the destination information is equivalent to a virtual target, where the claim does not define the structure of virtual target or the information associated with it. Therefore any specified target may be considered a virtual target, and furthermore, a physical target is equivalent to a virtual target as no designated structure has been specified.

Hipp discloses the data packet specifying a virtual target **(para 0025, line 26, IP address)** and switching the packet to a physical target **(para 0025, line 28, allocating new port)** that is associated with the virtual target **(para 0026, line 4, mapping b/w ports).**

Hipp discloses virtualizing by translating a first address to a second address (fig 7, 2, and para 0031, translates the initial port p1 to the new port p2) without buffering (where fig 7 and the related description show no buffering for the communication).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the multiplexing means (fig 4, 150) with the processor as disclosed by Gentieu. The motivation for this combination is to support the communication between applications which use virtual ports.

Gentieu does not specifically disclose wherein the first port is located on a first linecard and wherein the second port is located on a second linecard, the first linecard forwarding the packet to the second linecard along with information about the virtual target, the second linecard utilizing the information about the virtual target to update the packet with an address of a physical target.

Hipp discloses a first port **(p1 in fig 6)** forwarding the packet to a second port **(para 0031, lines 10-14, first port forwards data to second VPM, where the second VPM is directly associated with the second port P2)** along with information about the virtual target **(para 0031 lines 19-21m destination address).**

Hipp discloses the second port (para 0031, line 13, the second VPM is directly associated with the second port) utilizing the information about the virtual target to update the packet with an address of a physical target (para 0031 lines 13-14 and lines 19-21), where the translation involves translating form a first virtual port to a detention IP address and port).

The combined teachings of Gentieu and Hipp do not specifically disclose first and second ports being located on first and second linecards respectively.

Morgan discloses ports being located on a linecard as disclosed in **fig 5, element 74a and 74b.**

Regarding claim 8, Hipp discloses a plurality of port and a multiplexing system, where it would have been obvious to one of the ordinary skill in the art that the combined teachings is applicable to a plurality of linecards in connection such as those shown in fig 5 of Morgan.

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the combined teachings of Gentieu and Hipp, to provide the

discussed components on a line card such as that shown in fig 5 of Morgan. The

motivation for this modification is to support the physical and data link layer of

communication, and support different services **(Col 3 lines 22-30).**

<u>Claim 27</u>   Gentieu discloses the processor unit including a packet aggregation and

classification engine **(fig 1, 120, as no given function or structure has been given to**

the claimed unit) and a packet processor unit **(fig 1, 110, as no given function or**

structure has been given to the claimed unit).

<u>Claim 28</u>   Gentieu discloses instruction memory, where an SRAM or CAM may be

used depending on a designers preference/choice **(fig 1, 160).**

5.   Claims 14, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Tzeng (US 6693906) in view of Latif et al. (US 640030), hereinafter referred to as

Latif.

<u>Claim 14</u>   Tzeng discloses receiving a packet at an ingress port (element 20 in fig 1),

the packet being destined for a virtual target with a virtual target address

Tzeng discloses forwarding the packet to a fabric (element 25 in fig 1), which

forwards the packet to an egress port in accordance with address information (see fig 1

and description)

Tzeng discloses sending a packet at an egress port (any of elements 20 in fig 1).

Tzeng discloses sending at a second port the packet to a physical target that is associated with the virtual target (Col 3 lines 33-59 and see fig 1 including all of the shown ports), where the VLAN information and Layer 3 switching is used to route data to a destination.

Tzeng discloses buffer free identification of the incoming packet (Col 5 lines 41-43, where steps b and d as claimed are identification steps).

Tzeng does not specifically disclose each port associated with a line card, information including a flowID, and placing a virtual target descriptor identifier and the flow ID in a local header (fig 6a and 6c port ID),

Latif discloses each port associated with a line card (see figs 5, 6a, 6c, Col 7 line 47-Col 8 line 61), information including a flowID, and placing a virtual target descriptor identifier and the flow ID in a local header (fig 6a and 6c port ID).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the ports as disclosed by Tzeng to be applied with the line cards as disclosed by Latif. The motivation for this modification is to allow the switch the intelligence to determine the type of traffic and direct it accordingly (Col 19 lines 25-30).

Claim 15   Tzeng discloses the packet being for a particular request, and wherein at least one trace tag is associated with the packet and identifies information associated with the request (Col 5 lines 18-58).

Claim 18   Tzeng does not specifically disclose the virtual target descriptor being stored in an SRAM on the ingress line card and the virtual target descriptor identifier being stored in a CAM on the ingress line card.

Latif discloses a direct memory access block within fig 20.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the ports as disclosed by Tzeng to be applied with the line cards as disclosed by Latif. The motivation for this modification is to allow the switch the intelligence to determine the type of traffic and direct it accordingly (Col 19 lines 25-30).

6.   Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tzeng (US 6693906) in view of Latif et al. (US 640030), hereinafter referred to as Latif in further view of Gentieu (US 6880070).

Claim 16   The combined teachings of Tzeng and Latif do not specifically disclose wherein all of the steps are performed at wire speed.

Gentieu discloses a processor performing functions at wire speed **(Col 1 line 55, where the preceding claims do not specify which steps are associated with the wire speed as indicated by the 112 rejection).**

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine wire speed transmission in any device for fast communication.

Allowable Subject Matter

7.   Claims 19-23 are allowed.

Response to Arguments

8.   Applicant's arguments filed on August 2, 2007 have been fully considered but they are not persuasive.

(a)   The applicant argued that the cited art, Gentieu does not teach anything dealing with virtualizing packets.

The examiner maintains that Gentieu and Hipp are combined in order to achieve virtualizing packets, where the claim defines virtulualizing as the translation of a first address to a second address. Hipp discloses translating a first address to a second address as addressed by the rejection of claim 1, wherein Hipp discloses translates the first port p1 to the new port p2 (para 0031).

(b)   The applicant argued that the cited art, Hipp does not disclose translating a virtual target address to a physical target address.

The examiner maintains that the cited art discloses the applicants claimed limitation within its broadest interpretation, wherein Hipp discloses translating an initial port, where the ports are defined by IP addresses, to a new port p2, where that new port is also defined by an IP address, and is a destination port (para 0031). Furthermore, data is routed through the translated address/port to a destination, where the destination is depicted in fig 7 as the server.

(c)   The applicant argued that the cited art, Hipp does not disclose a storage switch.

The examiner maintains that Gentieu and Hipp are combined in order to teach a

storage switch, wherein Gentieu discloses a communication device within a storage

network (Col 1 line 18 and line lines 40-41), where the communication device is

equivalent to the switch claimed, where a switch by definition is merely a device for

changing the course or flow of a circuit, and there is no reason or indication within

Gentieu to believe that the network communication device and processor is not a

switch.

(d)   The applicant argued that Gentieu and Hipp are directed to unrelated areas of

technology, and nothing within the references would suggest combining the multiplexing

of Hipp with the processor of Gentieu.

The examiner maintains that there is motivation for combining both teachings,

and Gentieu and Hipp are suggestive for combining. Gentieu discloses the processor

performing multiplexing via a multiplexer (Col 5 lines 47-55). It would have been obvious

to modify the processor as disclosed by Gentieu to include the multiplexer as disclosed

by Hipp to replace the current multiplexer, where this new multiplexer now processes

virtual addresses.

(e)   The applicant argued that the cited art does not disclose wherein steps b and d

are performed without buffering the packet as disclosed in claim 14.

The examiner has revised the rejection of claim 14 to include the amended

material, wherein steps b and d that the claim makes reference to are identification

steps. Specifically Tzeng discloses buffer free identification of packets as disclosed within the rejection of claim 14.

(f)   Further arguments are similar to those above, so are addressed within the response to arguments taught above.

Conclusion

9.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Grey whose telephone number is (571)272-3160. The examiner can normally be reached on 10AM-7:30PM.
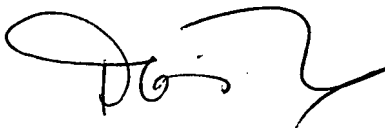
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571)272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Grey
Examiner
Art Unit 2616

DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600